



## Intelligent Alarms



## 822A Dual Alarm

### Thermocouple and Millivolt Input

#### Models

822A-0200:  
Dual input alarm with two SPDT relays

#### Input Ranges

TC types: J, K, T, R, S, E, B, N  
Millivolt:  $\pm 15.625\text{mV}$  to  $\pm 1.0\text{V DC}$

#### Alarm Outputs

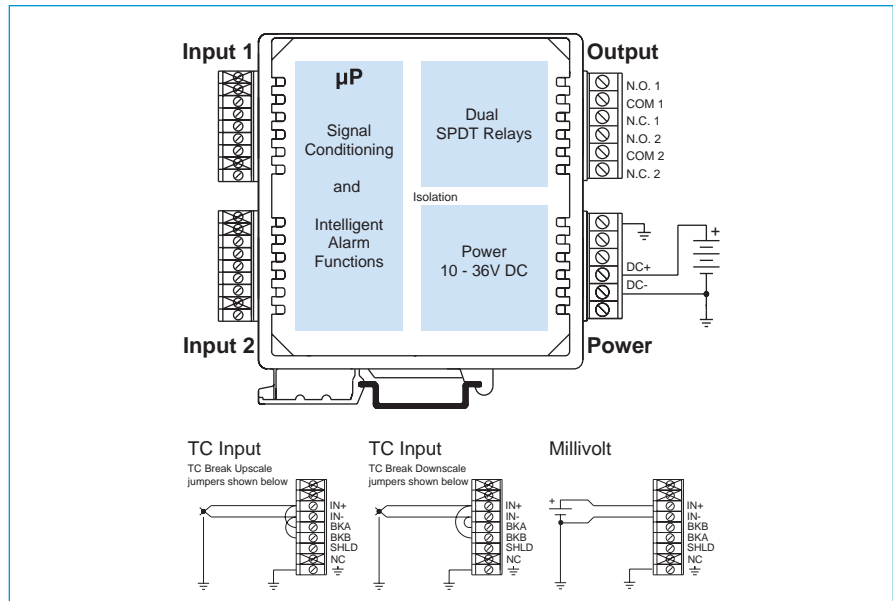
Dual SPDT electro-mechanical 5A relays

#### Power Requirement

10 to 36V DC

#### Approvals

CE marked. UL, cUL listed.



### Description

IntelliPack alarms compare inputs against user-defined limit setpoints to control built-in relays.

Each unit offers a selection of input ranges and alarm functions to handle a broad range of applications. As your needs change, you can easily reconfigure the unit for different ranges or functions. Alarm functions available on all models include on/off controller, limit alarm, window alarm, deviation alarm, rate-of-change alarm, and peak/valley detection.

Setup is very easy. IntelliPack alarms are configured through a user-friendly Windows 95/98/ME/NT/XP/2000 program. Field adjustments and recalibration are quickly performed with front-panel push-buttons and status LEDs. Once configured, IntelliPacks operate independent of any host computer.

### Special Features

- Integrated microcontroller performs intelligent signal processing for advanced alarm functions.
- Windows 95/98/ME/NT/XP/2000 software configuration speeds setup and replacement.
- Push-button reprogrammability facilitates changes in the field without a host PC.
- Multi-purpose inputs accept numerous ranges to reduce spare stock requirements.
- High-resolution Sigma-Delta A/D converter delivers high accuracy with low noise.
- Input excitation supply on each input provides power for a two-wire transmitter.
- Dual alarm operation lets you perform two alarm functions at the same time.



## ■ Performance

### ■ General Input

**Analog to Digital (A/D) Converter**  
16-bit  $\Sigma$ - $\Delta$  A/D converter.

**Resolution**  
 $\pm 0.005\%$  of span or  $0.1^\circ\text{C}/\text{LSB}$ . ADC typically yields resolutions finer than  $0.1^\circ\text{C}/\text{LSB}$ .

**Ambient Temperature Effect**  
Better than  $\pm 0.005\%$  of input span per  $^\circ\text{C}$  or  $\pm 1\mu\text{V}$ , whichever is greater.

**Noise Rejection**  
Normal Mode: Better than 40dB @ 60Hz.  
Common Mode: Better than 130dB @ 60Hz.

**Input Filter**  
Normal mode filtering, plus digital filtering optimized and fixed per input range within  $\Sigma$ - $\Delta$  ADC.

**Input Response Time**  
Less than 500mS to 98% of final value for a step change in the input. A software programmable delay can be implemented for filtering transients.

**Relay Time Delay**  
Adjustable alarm delay of up to 25 seconds.

**Input Overvoltage Protection**  
Bipolar Transient Voltage Suppressors (TVS).

### ■ Thermocouple Input

**Thermocouple Input Ranges**  
Thermocouple type user configured. Signal linearization, cold-junction compensation, and open circuit or lead break detection are included.

TC	$^\circ\text{C}$ Range ( $^\circ\text{F}$ Range)	Accuracy
J	-210 to 760 $^\circ\text{C}$ (-346 to 1400 $^\circ\text{F}$ )	$\pm 0.5^\circ\text{C}$
K	-200 to 1372 $^\circ\text{C}$ (-328 to 2502 $^\circ\text{F}$ )	$\pm 0.5^\circ\text{C}$
T	-260 to 400 $^\circ\text{C}$ (-436 to 752 $^\circ\text{F}$ )	$\pm 0.5^\circ\text{C}$
R	-50 to 1768 $^\circ\text{C}$ (-58 to 3214 $^\circ\text{F}$ )	$\pm 1.0^\circ\text{C}$
S	-50 to 1768 $^\circ\text{C}$ (-58 to 3214 $^\circ\text{F}$ )	$\pm 1.0^\circ\text{C}$
E	-200 to 1000 $^\circ\text{C}$ (-328 to 1832 $^\circ\text{F}$ )	$\pm 0.5^\circ\text{C}$
B	260 to 1820 $^\circ\text{C}$ (500 to 3308 $^\circ\text{F}$ )	$\pm 1.0^\circ\text{C}$
N	-230 to 1300 $^\circ\text{C}$ (-382 to 2372 $^\circ\text{F}$ )	$\pm 0.5^\circ\text{C}$

**Thermocouple Break Detection**  
Upscale or downscale.

### ■ DC Millivolt Input

**DC Millivolt/Voltage Input Ranges**

$\pm 1.0\text{V}$	$\pm 125\text{mV}$	$\pm 31.25\text{mV}$
$\pm 500\text{mV}$	$\pm 62.5\text{mV}$	$\pm 15.625\text{mV}$
$\pm 250\text{mV}$		

**Millivolt Accuracy**  
Better than  $\pm 0.05\%$  of input span.

### ■ Output

**Relays**  
Two independent SPDT electro-mechanical relays.  
Contact material Silver-Cadmium Oxide (AgCdO).

**Relay Ratings (CSA ratings)**  
25V DC @ 5A.  
120/240V AC @ 5A.

**Expected Mechanical Life**  
20 million operations.

### ■ Environmental

**Ambient Temperature**  
Operating:  $-25$  to  $70^\circ\text{C}$  ( $-13$  to  $158^\circ\text{F}$ ).  
Storage:  $-40$  to  $85^\circ\text{C}$  ( $-40$  to  $185^\circ\text{F}$ ).

**Relative Humidity**  
5 to 95%.

**Power Requirements**  
10 to 36V DC. 60mA @ 24V. 90mA @ 15V.

**Isolation**  
3-way (input/output/power).  
1500V AC for 60 seconds or 250V AC continuous.  
Inputs are isolated (up to 48V) from each other.

**Radiated Field Immunity (RFI)**  
EN61000-4-3, EN50082-1.

**Electromagnetic Field Immunity (EMI)**  
No relay trips will occur beyond  $\pm 0.25\%$  of input span from setpoint under the influence of electromagnetic fields from switching solenoids, commutator motors, and drill motors.

**Electrical Fast Transient (EFT)**  
EN61000-4-4, EN50082-1.

**Surge Withstanding Capability (SWC)**  
EN61000-4-5, EN50082-1.

**Electrostatic Discharge (ESD)**  
EN61000-4-2, EN50082-1.

**Radiated Emissions**  
EN50081-1 for Class B equipment.

**Approvals**  
CE marked, UL, cUL listed (USA, Canada).  
UL3121 - general product safety.

### ■ Configuration

**Software Configuration**  
Units are fully programmable via the Windows 95/98/ME/2000/NT/XP IntelliPack Configuration Program. Configuration downloads from PC through EIA232 serial port using Acromag 800C-SIP kit.

**Field Configuration**  
Setpoint and deadband are configurable via push-buttons and a standard calibrator.

**LED Indicators**  
LEDs indicate power, status, and alarm.

### ■ Physical

**Enclosure**  
Case: Self-extinguishing NYLON type 6.6 polyamide thermoplastic UL94 V-2, color beige; general purpose NEMA Type 1 enclosure.

**Connectors (Removable terminal blocks)**  
Wire Range: AWG #14-22 (AWG #12 stranded only).

**Printed Circuit Boards**  
Military grade FR-4 epoxy glass circuit board.

**Dimensions**  
1.05W x 4.68H x 4.35D inches.  
26.7W x 118.9H x 110.5D millimeters.

**Shipping Weight**  
1 pound (0.45 Kg) packed.

### ■ Ordering Information

IMPORTANT: All IntelliPacks require initial software configuration (order 800C-SIP). See Note 1 below.

**822A-0200**  
IntelliPack alarm unit.  
Two thermocouple/millivolt inputs, two SPDT relays.

**800C-SIP**  
Software Interface Package.  
Only one kit is required for all IntelliPack models.  
See diagram on Page 73 for included parts.

**5034-225**  
USB-to-RS232 adapter. See page 117 for more info.

**PS5R-D24**  
Power supply (24V DC, 2.1A).  
See Power Supplies on page 213.

**TBK-B01**  
Optional terminal block kit, barrier strip style, 2 pcs.  
(Does not include terminal block for input wiring.)

**TBK-S01**  
Optional terminal block kit, spring clamp style, 2 pcs.  
(Does not include terminal block for input wiring.)

NOTE 1: To order factory configuration, call Acromag for a configuration form which must accompany your order. Also, append "-C" to model number (example: 822A-0200-C). 800C-SIP kit is still recommended.



Optional terminal blocks: barrier strip (left) and spring clamp (right). Cage clamp terminal is standard.



## Accessories

### Terminal Blocks

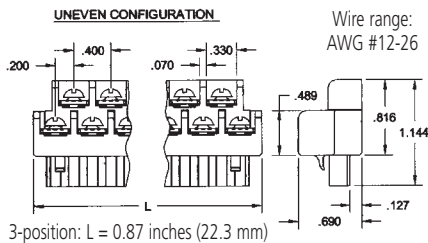
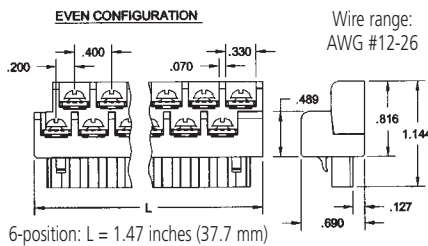


Barrier strip (left) and spring clamp (right).

#### Ordering Information

See individual I/O modules for compatibility.

#### Barrier Strip Terminal Blocks

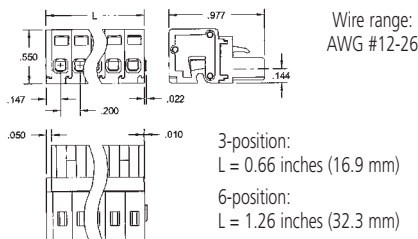


**TBK-B01**  
Terminal block kit,  
two 6-position pieces

**TBK-B03**  
Terminal block kit,  
one 3-position and  
three 6-position pieces

**TBK-B02**  
Terminal block kit,  
four 6-position pieces

#### Spring Clamp Terminal Blocks



**TBK-S01**  
Terminal block kit,  
two 6-position pieces

**TBK-S03**  
Terminal block kit,  
one 3-position and  
three 6-position pieces

**TBK-S02**  
Terminal block kit,  
four 6-position pieces

### Mounting Hardware

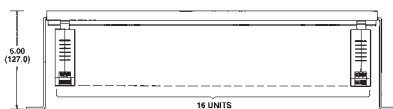
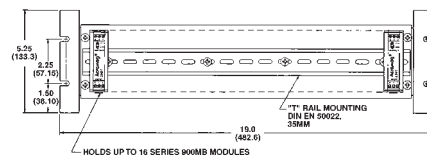


#### DIN-Rail Mounting

For your convenience, Acromag offers several mounting accessories to simplify your system installation. Our 19" rack-mount kit provides a clean solution for mounting your I/O modules and a power supply. Or you can buy precut DIN rail strips for mounting on any flat surface.

#### Ordering Information

- 20RM-16-DIN
- 19" rack-mount kit with DIN rail.
- DIN RAIL 3.0
- DIN RAIL 16.7
- DIN rail strip, Type T, 3 inches (75mm) or 16.7 inches (425mm)



### Power Supplies



#### 50W Supply

**Input Power Requirement**  
85 to 264V AC or 105 to 370V DC

**Output**  
24V DC, 2.1A (50W)

#### Ordering Information

PS5R-D24  
Universal 50W power supply

See Power Supplies on page 213 for other models and more information.

### USB / RS232 Adapter

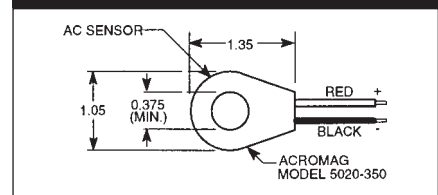


Length: 3.15 in (8.0 cm)  
Height: 0.80 in (2.03 cm)  
Width: 1.75 in (4.44 cm)  
Weight: 1.6 oz (45.36 g)

#### Ordering Information

5034-225  
USB-to-RS232 adapter

### AC Current Sensor



#### Ordering Information

5020-350  
AC current sensor



## Dimensions

